

ABSTRACT

The invention is aimed at providing a simple noise light elimination technique capable of eliminating noise light components contained in a signal light, together with wavelength components same as for the signal wavelength, with the condition of the light remaining as is, and an optical transmission system. To this end, an optical transmission system applied with a noise light elimination method according to the present invention comprises a high output type optical repeater and a noise light elimination unit for each required repeating span. This noise light elimination unit includes a dummy transmission path that, when a light of a power exceeding a threshold value is input, generates a return light due to stimulated Brillouin scattering (SBS). The signal light amplified in the optical repeater up to the power exceeding the threshold value is input to the dummy transmission path via an optical input/output section of the noise light elimination unit. The return light due to SBS generated in the dummy transmission path is extracted via the optical input/output section. As a result, the noise light components contained in the signal light are eliminated.